Record Nr. UNISALENTO991003392369707536 Autore Comets, Francis Directed polymers in random environments [e-book] : École d'Été de Titolo Probabilités de Saint-Flour XLVI-2016 / Francis Comets Cham: Springer, 2017 Pubbl/distr/stampa **ISBN** 9783319504872 Descrizione fisica 1 online resource Collana Lecture notes in mathematics, 1617-9692; 2175 Classificazione AMS 60K37 AMS 60F10 AMS 60H05 AMS 60J10 AMS 82-01 AMS 82B20 AMS 82B41 AMS 82D60 LC QA274.73 Ecole d'été de probabilités de Saint-Flour <46. ; 2016 ; Saint-Flour, Altri autori (Convegni) France> Disciplina 519.282 Soggetti Random walks (Mathematics) Martingales (Mathematics) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index Nota di contenuto 1 Introduction; 2 Thermodynamics and Phase Transition; 3 The martingale approach and the L2 region; 4 Lattice versus tree; 5 Semimartingale approach and localization transition; 6 Log-Gamma polymer model; 7 Kardar-Parisi-Zhang equation and universality; 8 Variational formulas. Sommario/riassunto Analyzing the phase transition from diffusive to localized behavior in a model of directed polymers in a random environment, this volume places particular emphasis on the localization phenomenon. The main question is: What does the path of a random walk look like if rewards and penalties are spatially randomly distributed? This model, which provides a simplified version of stretched elastic chains pinned by

random impurities, has attracted much research activity, but it (and its relatives) still holds many secrets, especially in high dimensions. It has

non-gaussian scaling limits and it belongs to the so-called KPZ universality class when the space is one-dimensional. Adopting a Gibbsian approach, using general and powerful tools from probability theory, the discrete model is studied in full generality. Presenting the state-of-the art from different perspectives, and written in the form of a first course on the subject, this monograph is aimed at researchers in probability or statistical physics, but is also accessible to masters and Ph.D. students